

REMARKS

Claims 4-10 are rejected under 35 U.S.C. § 112, second paragraph, and claims 4-9 are rejected on prior art grounds. The Examiner indicates that claim 10 is objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim.

Claim 11 has been withdrawn. Applicants hereby cancel claim 11 without prejudice or disclaimer. Applicants respectfully reserve the right to pursue additional claims, including the subject matter encompassed by the canceled claim, in one or more continuing applications.

Claims 4-10 are all the claims pending in the application.

Claim Rejections - 35 U.S.C. § 112

The Examiner has rejected claims 4-10 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

With respect to claim 4, the Examiner asserts that the recitation “wherein the second AC voltage has an arbitrary frequency and an arbitrary voltage” renders the claim indefinite. The Examiner appears to contend that the word arbitrary is indefinite. Accordingly, the claim is amended to recite that “the second AC voltage has a frequency value and a voltage value”.

The Examiner also asserts that the meaning of the “display” recited in claim 4 does not have proper antecedence in the specification and drawings. Thus, the Examiner asserts that the metes and bounds of the claim are unclear.

However, in the non-limiting exemplary embodiment discussed at the first paragraph on page 9 of the specification, a display is discussed. Moreover, the word “display” is used in the

claims according to its ordinary and customary meaning. Accordingly, Applicants submit that claim 4 complies with the requirements of 35 U.S.C. § 112, second paragraph.

With respect to claim 6, the Examiner asserts that there is no antecedence for “a DC voltage detecting unit configured to detect the second AC voltage” in the specification and drawings. The Examiner further asserts that Figures 1 and 4 show a DC voltage detecting unit 63 which is used to detect the output DC voltage of converter unit 61. The Examiner thus concludes that the metes and bounds of the claim are unclear. Claim 6 is amended to recite that the DC voltage detecting unit is configured to detect the DC voltage. Accordingly, Applicants submit that the claim complies with the requirements of 35 U.S.C. § 112, second paragraph, and respectfully request withdrawal of the rejection.

Claim Rejections - 35 U.S.C. § 102(b)

The Examiner has rejected claim 4 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,790,391 to Stich et al. (hereinafter “Stich”). Applicant traverses the rejection for at least the following reasons.

For example, claim 4 recites an electric power converter comprising a main circuit unit and a control unit. Claim 4 further recites that the main circuit unit comprises a first storage unit configured to store at least: characteristics of the main circuit unit, calibration values of the plurality of detectors, a production history, an operation history, and specifications of the main circuit unit. The control unit is configured to control a switching element to reach a desired on or off state.

Stich is directed to a standby power system 20 which provides AC power from input terminal 22 to a computer connected to terminals 24 or 26. If main AC power fails, backup power from the standby power system 20 is provided to the computer. In particular, the AC

power from input terminal is converted by rectifier 34 to DC power which charges a battery 30. If the AC power from the input terminals 22 can no longer support the load (computer), a controller 38 controls the standby power system 20 to power the load using backup power from the battery 30. User interface systems may be used to monitor operations of the standby power system. For example, a user interface system may provide a connection between the controller 38 and the computer via a serial port 64. Accordingly, a user may adjust operating parameters stored in the controller 38.

The Examiner asserts that Stich's standby power system 20 corresponds to the claimed main circuit unit and that the computer connected to Stich's standby power system 20 via the PC serial port (See Figure 1) corresponds to the claimed control unit. The Examiner further asserts that the memory in controller 38 corresponds to claimed first storage unit.

Applicants note that in order to anticipate a claim, a prior art reference must teach all of the elements in the claim. Moreover, "the identical invention must be shown in as complete detail as is contained in...the claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Although Stich suggests that controller 38 contains a storage unit (col. 11, lines 15-18), Stich merely discloses that 38 stores power system operating parameters. Stich is silent as to what the operating parameters stored in controller 38 comprise, and does not teach that the operating parameters include calibration values of the plurality of detectors, a production history, and an operation history of the standby power system 20. Thus, Applicants submit that Stich does not teach that the alleged first storage unit stores calibration values of the plurality of detectors, a production history, and an operation history of the alleged main circuit unit 20, as required by claim 4.

Moreover, Stich discloses that the computer system connected through 64 is used to allow an operator to be provided with standby power system operating condition information or to adjust certain standby power system operating parameters (col. 11, lines 8-19). Stich does not teach or suggest that the alleged control unit (PC connected through 64) is configured to control a switching element in the alleged main circuit unit 20 to reach a desired on or off state, as recited by claim 4. Instead, it is Stich's PMW controller 50 or micro-controller 38 which control the on or off state of the standby power system 20. However, these elements are not detachably attached to the standby power system 20, and therefore cannot correspond to the claimed control unit. Accordingly, Stich does not teach or suggest the control unit of claim 4.

Because Stich does not teach all of the features of claim 4 in complete detail, Applicants submit that the claim is not anticipated by Stich.

Claim Rejections 35 U.S.C. § 103(a)

The Examiner has rejected claims 4-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,335,870 to Sakurai (hereinafter "Sakurai"), in view of U.S. Patent No. 5,268,832 to Kandatsu (hereinafter "Kandatsu"). Applicants submit that the claims are patentable.

As discussed above, claim 4 recites an electric power converter comprising a main circuit unit and a control unit. Claim 4 further recites that the main circuit unit comprises a first storage unit configured to store at least: characteristics of the main circuit unit, calibration values of the plurality of detectors, a production history, an operation history, and specifications of the main circuit unit.

Sakurai is directed to an inverter apparatus comprising a converter 31 which converts an AC voltage from AC power supply 20 into a DC voltage. An inverter circuit 33 converts the DC

voltage into an AC voltage which is supplied to a motor. The inverter apparatus also includes a parameter storage which stores parameters which are set on the basis of the specifications of operation of the inverter apparatus. A computer 7 which is connected to the inverter apparatus stores controlling application software which is transferred to an AP S/W storage unit 5.

The Examiner asserts that Sakurai's inverter apparatus corresponds to the claimed main circuit unit and Sakurai's computer 7 corresponds to the claimed control unit. The Examiner further contends that Sakurai's parameter storage unit 4 corresponds to the claimed first storage unit of the main circuit unit.

However, Sakurai discloses that parameter storage unit 4 stores the execution priority order data 21, the execution-processing time interval data 22, the execution propriety data 24, and the vector number data 25 which constitute the application table (col. 4, lines 16-21). As discussed at col. 4, lines 6-14, this data merely determines the manner in which the controlling AP S/W is executed. This data does not correspond to calibration values of the plurality of detectors, a production history, and an operation history of the alleged main circuit unit. Accordingly, Applicants submit that Sakurai does not teach or suggest that the alleged first storage unit 4 stores calibration values of the plurality of detectors, a production history, and an operation history of the alleged main circuit unit, as required by claim 4.

Moreover, Sakurai discloses that the computer 7 merely transfers an inverter-controlling application program (controlling AP S/W) required for the target operation of the inverter apparatus to the AP S/W storage unit 5 in the inverter apparatus through the telecommunication means (col. 3, lines 38-43). Thus, Sakurai does not teach or suggest that the alleged control unit 7 is configured to control a switching element to reach a desired on or off state, as recited by claim 4. Indeed, the mere transfer of a program does not correspond to such control. It is

Sakurai's CPU 1, disposed in the inverter apparatus, which executes the program and thereby controls the on/off state. However, the CPU 1 is not detachably attached to the inverter circuit and therefore cannot correspond to the claimed control unit. Accordingly, Applicants submit that Sakurai does not teach or suggest the control unit of claim 4.

On page 7 of the Office Action, the Examiner acknowledges that Sakurai does not teach the claimed plurality of detectors and relies on Kandatsu to allegedly cure this deficiency. In particular, the Examiner asserts that Kandatsu's current and voltage detectors 7, 8, and 14 correspond to the claimed plurality of detectors.

However, Kandatsu does not cure the above noted deficiency of Sakurai. In particular, Kandatsu does not teach or suggest storing calibration values of the plurality of detectors, a production history, and an operation history of the main circuit unit, as recited by claim 4. Kandatsu also fails to teach or suggest a control unit which is configured to control the switching element to reach a desired on or off state and is detachably attached to a main circuit unit, as recited by claim 4. Indeed, Kandatsu is silent about such features.

Because Sakurai and Kandatsu, alone or in combination, do not teach or suggest all of the features of claim 4, Applicants submit that the claim is not rendered unpatentable by Sakurai and Kandatsu. Applicants also submit that claims 5-9 are patentable at least by virtue of their dependency on claim 4.

With further regard to claim 6, the claim recites a temperature detecting unit configured to detect a temperature of the switching unit. The Examiner appears to rely on Kandatsu as allegedly teaching the claimed plurality of detectors. However, the Examiner does not directly address the claimed temperature detecting unit. Applicants submit that Kandatsu does not teach or suggest the claimed temperature detecting unit. Indeed, Kandatsu only discloses voltage,

current, and power detectors. Sakurai does not cure this deficiency. Accordingly, Applicants submit that claim 6 is patentable for this additional reason.

With further regard to claim 7, the claim recites a communication circuit configured to receive the production history and the operation history from the first storage unit and to send the calibration values of the plurality of detectors to the control unit. The Examiner does not appear to address these features of the claim. As discussed above, Sakurai is silent about the alleged first storage unit 4 storing production history, operation history, and calibration values of the plurality of detectors. Kandatsu does not cure this deficiency. Accordingly, Sakurai and Kandatsu do not teach or suggest a communication circuit which sends and receives such information. Thus, Applicants submit that claim 7 is patentable for this additional reason.

Allowable Subject Matter

The Examiner indicates that claim 10 is objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim. Applicants respectfully request that the Examiner hold in abeyance such rewriting until the Examiner has had an opportunity to reconsider (and withdraw) the prior art rejection of the other claims.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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